

WHAT IS CLAIMED IS:

1. A motor control apparatus comprising:

pulse signal generating means for generating a
5 first pulse signal whose period corresponds to the
speed at which a driven object moves and a second pulse
signal out of phase with the first pulse signal;

edge detection means for detecting rising edges
and falling edges of the first and second pulse
10 signals;

edge interval information acquisition means for
acquiring information about intervals between the edges
of either the first or second pulse signal detected by
the edge detection means and the edges of the other
15 pulse signal detected next;

correction value acquisition means for acquiring
correction values for the intervals between the edges
of either the first or second pulse signal and the
edges of the other pulse signal detected next; and

20 control means for controlling movement of the
driven object based on the information acquired by the
edge interval information acquisition means and on the
correction values.

25 2. The motor control apparatus according to claim 1,
wherein the edge interval information acquisition means
acquires:

first edge interval information about the interval from a rising edge of the first pulse signal to a rising edge of the second pulse signal;

second edge interval information about the
5 interval from a rising edge of the second pulse signal to a falling edge of the first pulse signal;

third edge interval information about the interval from a falling edge of the first pulse signal to a falling edge of the second pulse signal; and

10 fourth edge interval information about the interval from a falling edge of the second pulse signal to a rising edge of the first pulse signal.

3. The motor control apparatus according to claim 1,
15 wherein the correction value acquisition means calculates respective correction values for the first, second, third, and fourth edge interval information.

4. The motor control apparatus according to claim 3,
20 wherein the correction value acquisition means calculates the correction values based on the first, second, third, and fourth edge interval information as well as on information about edge intervals between rising edges or falling edges of either the first or
25 second pulse signal, when the driven object is moved at a predetermined speed.

5. The motor control apparatus according to claim 3,
wherein the correction value acquisition means
comprises storage means for storing multiple pieces
each of the first, second, third, and fourth edge
5 interval information.

6. The motor control apparatus according to claim 5,
wherein the correction value acquisition means
comprises calculation means for calculating respective
10 average values for the first, second, third, and fourth
edge interval information using values stored in the
storage means.

7. The motor control apparatus according to claim 6,
15 wherein the correction value acquisition means
calculates respective correction values for the first,
second, third, and fourth edge interval information by
dividing the respective average values of the first,
second, third, and fourth edge interval information and
20 single-edge interval information about either the first
or second pulse signal by the number of single-edge
intervals.

8. The motor control apparatus according to claim 2,
25 wherein the control means uses the first, second, third,
and fourth edge interval information acquired by the
edge interval information acquisition means as well as

the correction values for the respective edge interval information.

9. A control method for a motor control apparatus,
5 the motor control method comprising:

a pulse signal generating step of generating a first pulse signal whose period corresponds to the speed at which a driven object moves and a second pulse signal out of phase with the first pulse signal;

10 an edge detection step of detecting rising edges and falling edges of the first and second pulse signals;

an edge interval information acquisition step of acquiring information about intervals between the edges
15 of either the first or second pulse signal detected in the edge detection step and the edges of the other pulse signal detected next;

a correction value acquisition step of acquiring correction values based on information about the
20 intervals between the edges of either the first or second pulse signal and the edges of the other pulse signal detected next as well as on information about edge intervals between rising edges or falling edges of either the first or second pulse signal; and

25 a control step of controlling movement of the driven object based on the information acquired by the

edge interval information acquisition means and on the correction values.

10. A motor control method, comprising:

5 a pulse signal generating step of generating a first pulse signal whose period corresponds to the speed at which a driven object moves and a second pulse signal out of phase with the first pulse signal;

10 an edge detection step of detecting rising edges and falling edges of the first and second pulse signals;

15 an edge interval measuring step of measuring intervals between edges of either the first or second pulse signal and the edges of the other pulse signal detected next as well as intervals between rising edges or falling edges of either the first or second pulse signal when the driven object moves at a predetermined constant speed;

20 a calculation step of calculating correction values for the intervals between the edges of either the first or second pulse signal and the edges of the other pulse signal detected next, based on information about the edge intervals measured in the edge interval measuring step; and

25 a control step of controlling movement speed of the driven object based on the correction values.

11. A recording apparatus which performs recording by causing a carriage carrying a recording head to scan over a recording medium, based on information transmitted from an external device, the recording apparatus comprising:

recording data generating means for converting the information transmitted from the external device into recording data compatible with configuration of the recording head;

10 pulse signal generating means for generating a first pulse signal whose period corresponds to transport speed of recording medium and a second pulse signal out of phase with the first pulse signal; and

control means for controlling the scanning of the recording head and transport of the recording medium, wherein the control means comprises:

edge detection means for detecting rising edges and falling edges of the first and second pulse signals;

20 edge interval information acquisition means for acquiring information about intervals between the edges of either the first or second pulse signal detected by the edge detection means and the edges of the other pulse signal detected next;

25 correction value acquisition means for acquiring correction values for the intervals between the edges

of either the first or second pulse signal and the edges of the other pulse signal detected next; and

second control means for controlling movement of the recording apparatus based on the information
5 acquired by the edge interval information acquisition means and on the correction values.

12. The recording apparatus according to claim 11, wherein the recording head is an ink jet recording head
10 which discharges ink for recording.

13. The recording apparatus according to claim 11, wherein the recording head uses thermal energy to discharge ink and comprises a thermal energy converter
15 for generating thermal energy to be given to the ink.

14. A recording apparatus which performs recording by causing a carriage carrying a recording head to scan over a recording medium based on information
20 transmitted from an external device, the recording apparatus comprising:

recording data generating means for converting the information transmitted from the external device into recording data compatible with configuration of the
25 recording head; and

a controller which controls the scanning of the recording head and transport of the recording medium, wherein the controller comprises:

detection means for detecting first pulse
5 information which corresponds to speed of the scanning or transport and second pulse information out of phase with the first pulse information;

edge detection means for detecting rising edges and falling edges of the detected first pulse
10 information and second pulse information;

edge interval measuring means for measuring edge-to-edge periods using the detected rising edges and falling edges;

calibration means for calibrating the measured
15 edge-to-edge periods with a reference period for driving the driven object at constant speed;

correction means for correcting the first pulse information and second pulse information based on the calibration; and

20 control means for generating control commands to drive the driven object based on the corrected first pulse information and second pulse information.

15. The recording apparatus according to claim 14,
25 wherein the recording head is an ink jet recording head which discharges ink for recording.

16. The recording apparatus according to claim 14,
wherein the recording head uses thermal energy to
discharge ink and comprises an thermal energy converter
for generating thermal energy to be given to the ink.

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